CLEARING THE AIR:
An examination of common concerns about **OFFSHORE WIND ENERGY**

In response to common concerns and misinformation about offshore wind facilities, the Sabin Center for Climate Change Law at Columbia University and Urban Ocean Lab developed a resource bank to support more informed decision making. A summary is below, and for more information and resources, visit the Sabin Center for Climate Change Law's resource bank.

COMMON CONCERNS:	RESEARCH SHOWS:
Offshore wind farms negatively impact other marine users like aquaculture and fishing industries.	While offshore wind development can restrict fishing access, early, ongoing, and meaningful engagement with fishers can help to address these concerns by imposing appropriate restrictions only when necessary, while also creating opportunities for co-use with mutually beneficial outcomes. Further, marine spatial planning tools such as GIS are also now being used to help identify potential co-location of offshore wind farms and fisheries and aquaculture.
Offshore wind farms pose a risk to marine ecosystems and the health of marine species and humans.	Impacts vary across the construction and operational phases of offshore wind farms. Some of the concerns include the potential for electromagnetic fields (EMFs) to impact marine organisms and humans, underwater noise impacts on marine species behavior and physiology, and disturbances to seafloor habitat. While some adverse environmental impacts may occur, offshore wind farms have also been found to create "artificial reef" habitat for local species, benefit seafloor habitat, and increase abundances of some fisheries' species. Further, the EMF levels produced by offshore wind facilities fall well below the recommended limits for human exposure and are therefore considered safe for humans. There is a limited understanding of potential EMF and noise impacts on marine species and ecosystems and additional research is needed to reduce risks. Additionally, through careful planning, offshore wind developers can schedule construction outside of breeding seasons and avoid important recruitment habitats. Finally, emerging technologies that could enable turbines to be installed in water depths up to 700 meters and create floating platforms in even deeper water could further reduce impacts on human activities and marine ecosystems.
Offshore wind farms will obstruct views in coastal areas for residents.	While national polls demonstrate high levels of public support for wind energy, proposed projects tend to meet local opposition with the obstruction of views as a commonly cited concern. Wind turbine visibility and noticeability vary with distance from the coastline — with much reduced visibility beyond 25 miles from shore — as well as size of facilities. A case study in France shows that turbines up to 30 km (18.6 miles) off the coast are perceived as zero to several centimeters above the horizon. Emerging technology like floating foundations can support deepwater (>50 m depth) integration of offshore wind that is farther offshore and thus has the potential to mitigate communities' concerns. Lessons from the first offshore wind development projects in the U.S. reveal that community engagement processes that involve learning from local scientific knowledge and providing tailored community benefits can help increase community support.
Offshore wind farms negatively impact coastal tourism.	While more research is needed on the effects of offshore wind on tourism and recreation, a case study in the U.S. found that offshore wind farms actually attract tourism or recreation, despite some of the negative impacts. In fact, the first commercial offshore wind farm in the U.S. significantly *increased* AirBnb reservations. In Europe, a number of solutions have been devised to mitigate and adapt to potential conflicts between offshore wind and tourism, including siting facilities to minimize socio-cultural impacts and allowing access by recreational vessels. Additionally, studies demonstrate that siting offshore wind farms farther from shore can improve the experience of beachgoers. Offshore wind farms also can contribute to recreational and tourism interest.
Offshore wind energy is not as cost effective as other forms of energy.	While offshore wind energy is still more expensive to produce than other forms of electricity from onshore wind, solar, coal, gas, and nuclear, the Levelized Cost of Energy (a measure of the present value of the costs of building and operating an energy-producing asset over its lifetime) for offshore wind dropped by 28-51% between 2014 and 2020, and is projected to become increasingly cost competitive by 2030 and beyond. Additionally, decreasing costs of offshore wind will be further offset by significant economic and environmental benefits. The Biden administration's goal to deploy 30 gigawatts (GW) of offshore wind by 2030 will create tens of thousands of jobs, trigger over $12 billion in capital investments along the coasts and create new domestic inland supply chains, generate enough clean power for 10 million U.S. homes annually, and avoid 78 million metric tons of cumulative carbon dioxide emissions.
Operations and maintenance (O&M) costs are a significant barrier to developing and running an offshore wind facility.	O&M costs of offshore wind facilities have declined by 45% globally in the last 10 years. Several steps may be taken to reduce O&M costs even further, including resource sharing between facilities, minimizing transportation and installation distance, and scheduled maintenance.

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